Gross-schmetterlinge der Erde, v. 7, p. 242, pl. 35(f).—McDunnough, 1938, Mem. So. California Acad. Sci., 1: 92, no. 2544.

Fagitana u-album (Guen.), Smith, 1909, Insects of New Jersey, p. 462.

Oligia ? u-album (Guen.), Forbes, 1954, Mem. Cornell U. Agric. Expt. Sta., No. 329, p. 210.

Iodopepla u-album (Guen.), Franclemont, 1964, Proc. Ent. Soc: Washington, 66 (2): 71.

Apamea purpuripennis Grote, 1874, Proc. Acad. Nat. Sci. Philadelphia, p. 206; 1875, Canadian Ent., 7: 58; 1882, New Check List of North American Moths, p. 29; 1883, Proc. Amer. Philos. Soc., 21: 147—Smith, 1893, Bull. U.S. National Museum, No. 44, p. 174 (as synonym of *u-album*).

Gortyna purpuripennis (Grt.), Grote, 1875, Check List of the Noctuidae of America, North of Mexico, pt. 1, p. 11; 1875, Bull. Buffalo Soc. Nat. Sci., 2: 309; 1890, Revised Check List of the North American Noctuidae, p. 20.

Orthosia baliola Morrison, 1874, Proc. Boston Soc. Nat. Hist., 17: 148.—Grote, 1875, Canadian Ent., 7: 58 (as synonym of *purpuripennis*).

Types.—The types of *u-album* and *purpuripennis* are in the British Museum (Natural History), London, England. The type of *baliola* may be in the Michigan State University collection, East Lansing, Michigan.

Distribution.—This species occurs mainly in the States of the Atlantic Coast, but its has been reported in the literature from Minnesota and there is a specimen from Baton Rouge, La., in the collection of the U.S. National Museum. Specimens from the following localities have been examined. Massachusetts (Winchendon), New Jersey (Lakewood and Lakehurst), Georgia (Thomasville), Florida (Hastings, St. Petersburg, and Key West), and Louisiana (Baton Rouge). The specimen from Lakewood, New Jersey, was reared from a pupa found in the soil of a cranberry bog. The food plant of the genus is unknown. Specimens from Florida were collected in March and April; but those from Massachusetts, New Jersey, and Louisiana were captured in August.

A NEW SUPERFICIALLY CRYPTIC SPECIES OF TROGODERMA FROM THE SOUTHWESTERN UNITED STATES[1]

(Coleoptera: Dermestidae)

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Trogoderma grassmani Beal (1954) is a moderately abundant species of dermestid beetle that occurs throughout the southwestern United States in old wasp, bee and sheltered bird nests, and frequently as a minor pest in various stored food products. The original description of the species included a series of twenty-three vaguely different specimens that were taken in a granary in Salina, Utah. Close study of their external features failed to reveal the consistent presence of any single character by which these specimens might be distinguished from *T. grassmani*.

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The pupae of *T. grassmani* are unique among members of the genus in that they lack dorsal gin-traps. All other *Trogoderma* species for which the pupae are known possess three sets of these movable, toothed, jaw-like structures (Hinton, 1946; Beal, 1954).

I collected a series of *Trogoderma* larvae in 1960 in the nest of an unidentified rodent in an old barn in Northern Arizona. Superficially they appeared to be *T. sternale plagifer* Casey. Upon rearing them to maturity I was surprised to find them identical with the Utah form of "*grassmani*." My surprise was compounded when I examined the pupae and found each with three, well-formed, dorsal gin-traps, completely unlike typical *T. grassmani*.

Still not satisfied that the two forms of "*grassmani*" represented completely distinct species, I carried out a series of crossbreeding experiments between them. A culture of *T. grassmani* was obtained from Komatke, Maricopa County, Arizona. These were isolated as pupae and placed on dried dog food in petri dishes in various combinations with similarly isolated specimens of the other form, all of which were progeny of the series collected at Wild Bill Tank in Coconino County, Arizona. The number of tests carried out was limited by the difficulty of obtaining adults of each form at the same time. However, I believe that enough tests were conducted to lead to reliable conclusions. In some tests, as can be seen from the following schedule, more than a single specimen of one sex was included in the hope of increasing the opportunity for crossbreeding. In *no* test were progeny produced.

No. of tests	Wild Bill Tank specimens	Komatke specimens
3	1 female	1 male
1	2 females	1 male
1	3 males	3 females
1	1 male	1 female
1	1 male	2 females
1	2 males	1 female

Several dishes with two specimens of the opposite sex of each form were kept under identical conditions as a control. These all produced progeny except for one pair of "Komatke" specimens.

Dissection of the male genitalia of the forms shows noticeable dissimilarities in the length of the aedeagus relative to the length of the lateral lobes. This difference in the genitalia, the presence of pupal gin-traps, and the evident reproductive barrier seem to indicate beyond question that this form is specifically distinct from *T. grassmani*.

I submit therefore the following description of the new species and take pleasure in dedicating it to Mr. George Okumura of Sacramento, California, a student of the genus to whom I am indebted for much information on the group.

Trogoderma okumurai, new species

(Figs. 2, 3, 4, 5)

Adult male.—Color of dorsal and ventral surfaces black with elytral maculae reddish; antenna with first segment brownish and apical segments black; femora brownish black with extremities of legs brownish. Pubescence of dorsal surfaces moderately coarse, suberect, consisting of blackish, light golden-brown, and white hairs; pubescence of undersurfaces moderately coarse, recumbent, golden-brown.

Head with punctures of frons shallow, two or three times as wide as facet of eye, separated by about one-fourth diameter but becoming confluent toward epistoma and smaller and more sparse on vertex; pubescence of intermingled black, golden-brown and white hairs. Antenna 11-segmented, extending in repose nearly to hind angle of prothorax; segment three minute, half as wide as segments two or four; segments four to nine strongly eccentric; segment ten sub-

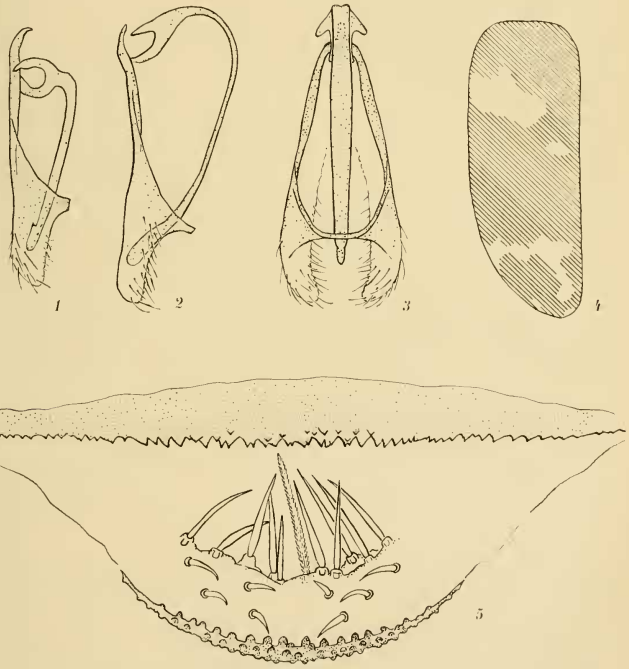

Fig. 1, Lateral view of male genitalia of *Trogoderma grassmani;* fig. 2, lateral view of male genitalia of *T. okumurai;* fig. 3, same in ventral view; fig. 4, pattern of elytral maculation in typical specimen of *T. okumurai;* fig. 5, middle gintrap of pupa of *T. okumurai.*

eccentric; segment eleven subequal in length to length of segments nine and ten combined. Eyes with medial margins straight.

Pronotum immaculate; punctures of disc simple, subequal in diameter to facet of eye, separated by one to four diameters, becoming coarser and denser toward sides. Pubescence black on disc with intermingled white and golden-brown hairs on sides and patch of white hairs on basal lobe.

Elytra with punctures of disc two or three times as large as punctures of pronotum, separated by one or two diameters of one puncture. Maculation as figured. Light colored pubescence mostly limited to areas of light maculation and consisting mostly of white hairs with a few scattered golden-brown hairs. Epipleuron ending at about level of hind margin of metasternum; transversely shallowly concave on anterior half. Hind wings with very short pigmented proximal spur on stigma; vein 1A reduced to very short spur distally to point of divergence from vein $2A_2$.

Antennal fossa extending to base of pronotum, about one-third as wide as long, deeply excavated; anterolateral wall concave; posterior diagonal margin raised and knife-like, extending to lateral apex of fossa; floor of fossa minutely granulate-rugose throughout. Mesosternal disc with raised part on either side of sulcus trapezoidal, a little longer than wide. Ratio of width between procoxae and mesocoxae 1:3.2. Mestasternum without oblique discal striae; median anterior process broad, subtruncate, with wide, interrupted margin. Abdomen without oblique striae on first sternite. Tergite of first periphallic segment rounding, set with several series of short setae along apical margin. Phallus as illustrated. Length (of pronotum and elytra): 2.5 mm.; width (across humeri): 1.4 mm.

Adult female.—Antenna brownish, extending in repose to about anterior third of lateral margin of pronotum; segments three to seven subequal in length and becoming very little but progressively wider and eccentric; club four-segmented with segments slightly eccentric; segment eleven about one and one-half times as long as segment ten. Antennal fossa with floor minutely granulate-rugose on medio-anterior two-thirds becoming finely punctate on latero-posterior third. Length (of pronotum and elytra): 3.0 mm.; width (across humeri): 1.7 mm.

Range of observed variations: Pubescence of pronotum almost entirely black with few scattered white hairs laterally to black on disc with white and golden-brown and few scattered black hairs on sides. Elytral pattern consisting of narrow subbasal and subapical light maculate bands covered with light colored pubescence and few light colored submedian hairs to broad subbasal and subapical light maculate bands with submedian light maculate area as figured. Length of males varying from 2.2 mm. to 2.8 mm. Length of females varying from 2.4 mm. to 3.1 mm. Ratio of width to length of males and females varying from 1:1.72 to 1:1.92.

Type data.—Male holotype, female allotype, numerous spermotypes (specimens bred from holotype and allotype) and numerous paratypes (in cultures from original collection): Wild Bill Tank (6 miles north of Bellemont), Coconino County, Arizona, original collection of larvae made August 25, 1960, R. S. Beal; 23 paratypes: Salina, Utah, July 2, 1943, C. J. Sorenson. Holotype and allotype deposited in the collection of the California Academy of Sciences.

Adults of this species will key to *T. grassmani* in the keys of Okumura and Blanc (1955) and Beal (1956). Differences in the male

genitalia provide positive separation of the two species. Larvae key to *T. grassmani* using the key of Okumura and Blanc but to *T. sternale plagifer* using the key published by Beal in 1960.

I have been unable to find any single character that may be used consistently to separate larvae of *T. okumurai*, *T. grassmani*, and *T. sternale*. Color variations of *T. okumurai* may produce specimens resembling variations of either of the other species. *T. okumurai* is never quite as dark as most specimens of *T. grassmani*, but some have the terga and pronotum as dark as the lighter variants of *T. grassmani*. Other specimens are creamy-yellow like *T. sternale plagifer*, and others may have moderately dark mesonotum, metanotum and terga, and a light colored pronotum like *T. sternale maderae*. The large spicisetae of the abdominal terga are quite sparse on the middle half of each tergum of *T. okumurai*, and the small spicisetae of the terga are dense, giving the larvae a silky appearance similar to *T. sternale plagifer*. Larvae of *T. grassmani* usually have a much denser transverse row of large spicisetae across the middle of each tergite and finer, less conspicuous setae inserted on the acrotergite. However, occasional larvae of *T. grassmani* also have a fairly sparse transverse row of large spicisetae.

The combination of characters that I find most helpful in separating larvae of *T. okumurai* from other closely related forms in the same general geographic area are the following:

T. grassmani: Most of the large spicisetae that form a transverse row across the abdominal tergites are located behind the middle. In *T. okumurai* most of the large spicisetae are inserted at the middle or before the middle. In *T. grassmani* there are in addition usually two or three setae inserted on the dorsal side of the second segment of the maxillary palpi but usually only one in *T. okumurai*.

T. sternale plagifer: Most specimens of *T. okumurai* have darker pigmentation on the terga than is found in this species. Usually specimens are taken in a series. A series consisting of all light-colored specimens keying out to *T. sternale maderae* would in all probability correctly be assigned to it. A series in which most specimens showed darkly pigmented terga should probably be assigned to *T. okumurai*.

T. sternale maderae: Mature specimens almost invariably have one or two setae inserted on the second antennal segment. This is true of no specimens of *T. okumurai* that I have seen.

References

Beal, R. S., Jr. 1954. Biology and Taxonomy of the Nearctic species of *Trogoderma* (Coleoptera: Dermestidae). Univ. of Calif. Pub. in Entom. 10(2): 35-102.

————. 1956. Synopsis of the economic species of *Trogoderma* occurring in the United States with description of a new species (Coleoptera: Dermestidae). Ann. Ent. Soc. Amer. 49(6): 559-566.

————. 1960. Descriptions, biology, and notes on the identification of some *Trogoderma* larvae (Coleoptera, Dermestidae). U.S.D.A. Tech. Bull. 1228, pp. 1-26.

Hinton, H. E. 1946. The "gin-traps" of some beetle pupae; a protective device which appears to be unknown. Trans. Roy. Ent. Soc. London 97: 473-496.

Okumura, G. T., *and* **F. L. Blanc** 1955. Key to species of *Trogoderma* and to related genera of Dermestidae commonly encountered in stored grain in California, pp. 87-89, *in* The Khapra beetle *Trogoderma granarium*. Special Report of the Joint Interim Committee on Agricultural and Livestock Problems (Senate of the State of California).

ACINIA PICTURATA (SNOW), A RESURRECTED SYNONYM

(Diptera: Tephritidae)

The genus *Acinia* Robineau-Desvoidy (1830, Essai sur les Myodaires, p. 775) is represented by two species in the Palearctic (Hendel, 1927, Flieg. Palaearkt. Reg., p. 136), by one species in the Nearctic, and by eight species in the Neotropical Region. The single Nearctic species has been cited as *fucata* (F.) ever since Loew (1862, Smithsonian Misc. Collect. 6(1): 95) first associated North American specimens with that name in one of the earliest revisions of North American Tephritidae. Benjamin (1934, U.S. Dept. Agric. Tech. Bull 401, p. 46) suggested that the North American specimens did not, in his opinion, seem to fit the "Fabrician descriptions" and tentatively stated that *Acinia picturata* (Snow), described as *Tephritis picturata* (Snow, 1894, Kansas Univ. Quart. 2: 173; type locality, Florida) might be the name properly applicable to them.

In his revision of New World *Acinia*, Aczél (1958, Rev. Brasileira Ent. 8: 75) makes abundantly clear that *picturata* and *fucata* are indeed distinct and easily recognizable, and that the latter has its population center in northern South America. The revision by Aczél should be consulted for means of separating the two species.

Acinia picturata (Snow) (= *Acinia fucata* (F.) of North American authors) is found from New Jersey south to Florida and in all of the southern States west to and including California. It is also known to occur in Baja California, in Mexico at least as far south as the State of Veracruz, and in Jamaica, Puerto Rico, and on the island of Antigua. *A. picturata* has been reared from inflorescences of *Pluchea foetida*, *P. imbricata*, *P. purpurascens*, and *P. sericea*, and larvae of *fucata* have been found in the stems of *Tessaria absinthoides* and *T. integrifolia*, lending further credence to the distinction between the two species.

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